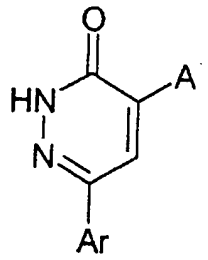
AMENDMENTS TO THE CLAIMS:

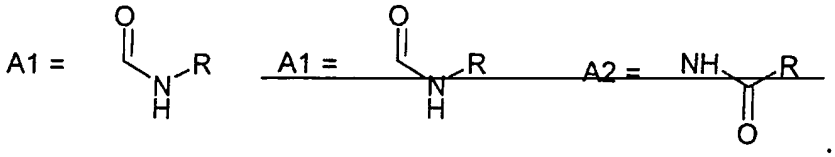
This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently amended) A compound of formula (I)



(I)

wherein A represents A1 ~~or A2~~



;

R is unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, heteroaryl, heteroaryl-(C_1-C_{10}-alkyl)-, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)-, C_3-C_{10}-cycloalkyl, polycycloalkyl, C_2-C_{10}-alkenyl or C_2-C_{10}-alkinyl,

where the substituents are chosen from halogen, -CN, C_1-C_{10}-alkyl, -NO_2, -OR1, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1, -C(O)NR1R2, -SR1, -S(O)R1, -SO_2R1, -$NHSO_2$R1, -SO_2NR1R2, -C(S)NR1R2, -NHC(S)R1, -O-SO_2R1, -SO_2-O-R1, oxo, -C(O)R1, -C(NH)NH_2, heterocyclyl, C_3-C_{10}-cycloalkyl, aryl-(C_1-C_6-alkyl)-, aryl, heteroaryl, trifluoromethyl, trifluoromethylsulfanyl and trifluoromethoxy,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoromethoxy or OH;

Ar is unsubstituted or at least monosubstituted aryl or heteroaryl;

where the substituents are chosen from halogen, [[~~-CN,~~]] NO_2, C_1-C_{10}-alkyl, [[~~-OR1~~]] -OH, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1, -C(O)NR1R2, -NHC(S)R1, -C(S)NR1R2, -SR1, -S(O)R1, $-SO_2R1$, $-NHSO_2R1$, $-SO_2NR1R2$, $-O-SO_2R1$, $-SO_2-O-R1$, aryl, heteroaryl, aryl-(C_1-C_6-alkyl)-, formyl, trifluoromethyl and trifluoromethoxy,

and the substituents aryl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoromethoxy or OH;

R1 and R2, independently from each other, are

hydrogen;

unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, C_3-C_{10}-cycloalkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)- or heteroaryl, where the substituents are chosen from halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, CN, NO_2 , NH_2, (C_1-C_6-alkyl)amino-, di(C_1-C_6-alkyl)amino-, OH, COOH, -COO-(C_1-C_6-alkyl), $-CONH_2$, formyl, trifluoromethyl and trifluoromethoxy;

heteroaryl is a 5 to 10-membered, aromatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

aryl is phenyl, indanyl, indenyl or naphthyl;

heterocyclyl is a 5 to 10-membered, aliphatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof;

with the proviso that
~~(1)~~ A is not -C(O)NH(C_1-C_6-alkyl), when Ar is phenyl which is at least monosubstituted with heterocyclyl or heteroaryl containing nitrogen,
~~(2) the compound is not 3-[4-(3,4,5-trimethoxyanilinocarbonyl)-3-oxo-2,3-dihydropyridazino-6-yl]-2-phenyl-pyrazolo[1,5-a]pyridine; 3-[4-(N-ethoxycarbonylmethyl)-carbamoyl-3-oxo-2,3-dihydro-pyridazino-6-yl]-2-phenyl-pyrazolo[1,5-a]pyridine; 3-[4-(N-carboxymethyl)-carbamoyl-3-oxo-2,3-dihydro-pyridazino-6-yl]-2-phenyl-pyrazolo[1,5-a]pyridine; 6-(4-cyanophenyl)-4[(4-carboxybutyl)-aminocarbonyl]-2H-pyridazin-3-one; or 6-(4-methoxyphenyl)-4-methylcarbamoyl-2H-pyridazin-3-one, and~~
~~(3) when A is NHCOCH(CH_3)$_2$, Ar is not unsubstituted or at least monosubstituted bicyclic heteroaryl~~

wherein when Ar is a 9-membered bicyclic heterocycle containing one or more heteroatoms selected from N, O and S, Ar is unsubstituted.

2. (Previously presented) The compound according to claim 1, wherein in the formula (I)

A is A1;

R is unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, heteroaryl, heteroaryl-(C_1-C_{10}-alkyl)-, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)-, C_3-C_{10}-cycloalkyl, polycycloalkyl, C_2-C_{10}-alkenyl or C_2-C_{10}-alkinyl,

where the substituents are chosen from halogen, -CN, C_1-C_{10}-alkyl, -NO_2, -OR1, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1,

-C(O)NR1R2, -SR1, -S(O)R1, -SO_2R1, -$NHSO_2$R1, -SO_2NR1R2, -C(S)NR1R2, -NHC(S)R1, -O-SO_2R1, -SO_2-O-R1, oxo, -C(O)R1, -C(NH)NH_2, heterocyclyl, C_3-C_{10}-cycloalkyl, aryl-(C_1-C_6-alkyl)-, aryl, heteroaryl, trifluoromethyl, trifluoromethylsulfanyl and trifluoromethoxy,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoromethoxy or OH;

R1 and R2, independently from each other, are

hydrogen;

unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, C_3-C_{10}-cycloalkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)- or heteroaryl, where the substituents are chosen from halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, CN, NO_2 , NH_2, (C_1-C_6-alkyl)amino-, di(C_1-C_6-alkyl)amino-, OH, COOH, -COO-(C_1-C_6-alkyl), -$CONH_2$, formyl, trifluoromethyl and trifluoromethoxy;

heteroaryl is a 5 to 10-membered, aromatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

aryl is phenyl, indanyl, indenyl or naphthyl;

heterocyclyl is a 5 to 10-membered, aliphatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

3. (Previously presented) The compound according to claim 1, wherein in the formula (I)

R is unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)-, C_3-C_{10}-cycloalkyl, heteroaryl or heteroaryl-(C_1-C_{10}-alkyl)-,

where the substituents are chosen from halogen, -CN, C_1-C_{10}-alkyl, $-NO_2$, -OR1, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1, -C(O)NR1R2, -SR1, -S(O)R1, $-SO_2$R1, $-NHSO_2$R1, $-SO_2$NR1R2, -C(S)NR1R2, -NHC(S)R1, -O-SO_2R1, $-SO_2$-O-R1, oxo, -C(O)R1, $-C(NH)NH_2$, heterocyclyl, C_3-C_{10}-cycloalkyl, aryl-(C_1-C_6-alkyl)-, aryl, heteroaryl, trifluoromethyl, trifluoromethylsulfanyl and trifluoromethoxy,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoroethoxy or OH;

R1 and R2, independently from each other, are

hydrogen;

unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, C_3-C_{10}-cycloalkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)- or heteroaryl, where the substituents are chosen from halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, CN, NO_2 , NH_2, (C_1-C_6-alkyl)ami no-, di(C_1-C_6-alkyl)amino-, OH, COOH, -COO-(C_1-C_6-alkyl), $-CONH_2$, formyl, trifluoromethyl and trifluoromethoxy;

heteroaryl is a 5 to 10-membered, aromatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

aryl is phenyl, indanyl, indenyl or naphthyl;

heterocyclyl is a 5 to 10-membered, aliphatic, mono- or bicyclic heterocycle, containing one or more heteroatoms chosen from N, O and S;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

4. (Currently amended) The compound according to claim 1, wherein in the formula (I)

Ar is unsubstituted or at least monosubstituted phenyl, pyridinyl, pyrimidinyl, pyrazolyl, thiophenyl, isoxazolyl, benzo[b]thiophenyl, benzodioxolyl or thiazolo[3,2-b][1,2,4]-thiazolyl,

where the substituents are chosen from halogen, [[~~-CN,~~]] NO_2, C_1-C_{10}-alkyl, [[~~-OR1~~]] -OH, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1, -C(O)NR1R2, -NHC(S)R1, -C(S)NR1R2, -SR1, -S(O)R1, $-SO_2R1$, $-NHSO_2R1$, $-SO_2NR1R2$, $-O-SO_2R1$, $-SO_2-O-R1$, aryl, heteroaryl, aryl-(C_1-C_6-alkyl)-, formyl, trifluoromethyl and trifluoromethoxy,

and the substituents aryl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoromethoxy or OH;

R1 and R2, independently from each other, are

hydrogen;

unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, C_3-C_{10}-cycloalkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)- or heteroaryl, where the substituents are chosen from halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, CN, NO_2 , NH_2, (C_1-C_6-alkyl) amino-,

di(C_1-C_6-alkyl)amino-, OH, COOH, -COO-(C_1-C_6-alkyl), -$CONH_2$, formyl, trifluoromethyl and trifluoromethoxy;

heteroaryl is a 5 to 10-membered aromatic, mono- or bicyclic heterocycle, containing one or more heteroatoms chosen from N, O and S;

aryl is phenyl, indanyl, indenyl or naphthyl;

heterocyclyl is a 5 to 10-membered aliphatic, mono- or bicyclic heterocycle, containing one or more heteroatoms chosen from N, O and S;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

5. (Previously presented) The compound according to claim 1, wherein in the formula (I)

A is A1;

R is unsubstituted or at least monosubstituted aryl-(C_1-C_6-alkyl)-heteroaryl-(C_1-C_6-alkyl)- or heterocyclyl-(C_1-C_6-alkyl)-,

where the substituents are chosen from halogen, C_1-C_6-alkyl, -OH, -O-aryl, C_1-C_6-alkoxy, -O-(C_1-C_6-alkylen)-N(C_1-C_6-alkyl)$_2$, -C(O)OH, -C(O)O-(C_1-C_6-alkyl), -NH_2, -N(C_1-C_6-alkyl)$_2$, -NH(C_1-C_6-alkyl), -NH(C_1-C_{10}-cycloalkyl), -$C(O)NH_2$, -C(O)NH-heteroaryl, -C(O)NH-(C_1-C_6-alkyl), -SO_2(C_1-C_6-alkyl), -SO_2NH_2, -C(O)-heterocyclyl, -$C(NH)NH_2$, heterocyclyl, aryl-(C_1-C_6-alkyl)-, aryl, trifluoromethyl, and trifluoromethoxy,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_3-alkyl, C_1-C_3-alkoxy, fluorine, chlorine, bromine, trifluoromethyl, trifluoromethoxy or OH;

heteroaryl is imidazolyl, thiophenyl, furanyl, isoxazolyl, pyridinyl, pyrimidinyl, benzoimidazolyl, indolyl or benzodioxolyl;

aryl is phenyl or naphthyl;

heterocyclyl is morpholinyl, piperazinyl or piperidinyl;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

6. (Currently amended) The compound according to claim 1, wherein in the formula (I)

A is A1;

Ar is unsubstituted or at least monosubstituted phenyl, pyridin-4-yl or pyrimidin-4-yl,

where the substituents are chosen from halogen, C_1-C_6-alkyl, -OH, ~~C_1-C_6-alkoxy,~~ -C(O)OH, -C(O)O-(C_1-C_6-alkyl), $-NH_2$, -N(C_1-C_6-alkyl)$_2$, -NH(C_1-C_6-alkyl), -NH(C_1-C_{10}-cycloalkyl), -NH(heterocyclyl-(C_1-C_6-alkyl-)), -NH(aryl-(C_1-C_6-alkyl-)), $-C(O)NH_2$, -C(O)NH-(C_1-C_6-alkyl), aryl, and heteroaryl,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_3-alkyl, C_1-C_3-alkoxy, fluorine, chlorine, bromine, trifluoromethyl, trifluoromethoxy or OH;

heteroaryl is pyridinyl or pyrimidinyl;

aryl is phenyl or naphthyl;

heterocyclyl is morpholinyl, piperazinyl or piperidinyl;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

7. (Currently amended) The compound according to claim 1, wherein in the formula (I)

A is A1;

R is unsubstituted or at least monosubstituted benzyl, phenylethyl-, phenylpropyl-, piperazinylpropyl-, pyridinylmethyl-, pyridinylethyl- or pyridinylpropyl-,

where the substituents are chosen from chlorine, bromine, fluorine, trifluoromethyl, methyl, ethyl, propyl, methoxycarbonyl and carboxy;

Ar is unsubstituted or at least monosubstituted pyridin-4-yl, pyrimidin-4-yl or phenyl,

where the substituents are chosen from methylamino-, ethylamino-, propylamino-, butylamino-, hydroxy, ~~methoxy, ethoxy,~~ methyl, ethyl, propyl, (phenylethyl)amino-, benzylamino-, and (morpholinylethyl)amino-;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

8. (Currently amended) The compound according to claim 1 chosen from

6-(2-butylamino-pyrimidin-4-yl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid (3-pyridin- 3-yl-propyl)-amide,

6-(4-hydroxy-3-methoxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid (3-pyridin-3-yl-propyl)-amide,

6-(4-hydroxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid (3-pyridin-3-yl-propyl)-amide,

6-(2-ethylamino-pyrimidin-4-yl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide,

6-(3-chloro-4-hydroxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide,

~~4-({[6-(4-hydroxy-3-methoxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carbonyl]-amino}-methyl)-benzoic acid,~~

6-(2-butylamino-pyrimidin-4-yl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid (pyridin-3-yl-methyl)-amide,

6-(3-fluoro-4-hydroxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide,

6-[2-(2-morpholin-4-yl-ethylamino)-pyrimidin-4-yl]-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide,

N-(3,4-dichlorobenzyl)-3-oxo-6-pyridin-4-yl-2,3-dihydropyridazin-4-carboxamide,

3-oxo-6-pyridin-4-yl-2,3-dihydro-pyridazine-4-carboxylic acid [2-(2-chloro-phenyl)-ethyl]-amide,

6-(2-methylamino-pyridin-4-yl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzyl amide,

R-3-oxo-6-[2-(1-phenyl-ethylamino)-pyrimidin-4-yl]-2,3-dihydro-pyridazine-4-carboxylic acid (3-pyridin-3-yl-propyl)-amide,

6-(2-butylamino-pyrimidin-4-yl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid [3-(4-methyl-piperazin-1-yl)-propyl]-amide,

4-{[(3-oxo-6-pyridin-4-yl-2,3-dihydro-pyridazine-4-carbonyl)-amino]-methyl}-benzoic acid methyl ester,

6-(2-methylamino-pyrimidin-4-yl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid (3-pyridin-3-yl-propyl)-amide,

~~6-(4-hydroxy-3-methoxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide,~~

6-(2-methylamino-pyrimidin-4-yl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide,

6-(4-hydroxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide,

3-oxo-6-pyridin-4-yl-2,3-dihydro-pyridazine-4-carboxylic acid 4-bromo-benzylamide,

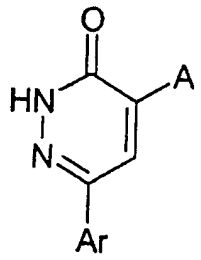
N-(2,4-dichlorobenzyl)-3-oxo-6-pyridin-4-yl-2,3-dihydropyridazine-4-carboxamide,

3-oxo-6-pyridin-4-yl-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-2-fluoro-benzylamide, and

N-(4-chlorobenzyl)-3-oxo-6-pyridin-4-yl-2,3-dihydropyridazine-4-carboxamide;

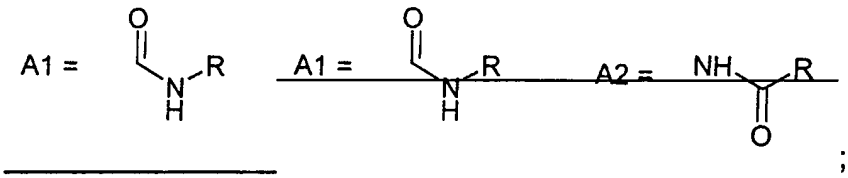
or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

9. (Currently amended) A method for inhibiting CDK2 *in vivo* comprising administering a physiologically active amount of a compound of formula (I)



(I)

wherein A represents A1 ~~or A2~~



;

R is unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, heteroaryl, heteroaryl-(C_1-C_{10}-alkyl)-, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)-, C_3-C_{10}-cycloalkyl, polycycloalkyl, C_2-C_{10}-alkenyl or C_2-C_{10}-alkinyl,

where the substituents are chosen from halogen, -CN, C_1-C_{10}-alkyl, $-NO_2$, -OR1, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1, -C(O)NR1R2, -SR1, -S(O)R1, $-SO_2$R1, $-NHSO_2$R1, $-SO_2$NR1R2, -C(S)NR1R2, -NHC(S)R1, -O-SO_2R1, $-SO_2$-O-R1, oxo, -C(O)R1, $-C(NH)NH_2$, heterocyclyl, C_3-C_{10}-cycloalkyl, aryl-(C_1-C_6-alkyl)-, aryl, heteroaryl, trifluoromethyl, trifluoromethylsulfanyl and trifluoromethoxy,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoromethoxy or OH;

Ar is unsubstituted or at least monosubstituted aryl or heteroaryl;

where the substituents are chosen from halogen, [[~~-CN,~~]] NO_2, C_1-C_{10}-alkyl, [[~~-OR1~~]] -OH, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1, -C(O)NR1R2, -NHC(S)R1, -C(S)NR1R2, -SR1, -S(O)R1, $-SO_2R1$, $-NHSO_2R1$, $-SO_2NR1R2$, $-O-SO_2R1$, $-SO_2-O-R1$, aryl, heteroaryl, aryl-(C_1-C_6-alkyl)-, formyl, trifluoromethyl and trifluoromethoxy,

and the substituents aryl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoromethoxy or OH;

R1 and R2, independently from each other, are

hydrogen;

unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, C_3-C_{10}-cycloalkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)- or heteroaryl, where the substituents are chosen from halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, CN, NO_2 , NH_2, (C_1-C_6-alkyl)amino-, di(C_1-C_6-alkyl)amino-, OH, COOH, -COO-(C_1-C_6-alkyl), $-CONH_2$, formyl, trifluoromethyl and trifluoromethoxy;

heteroaryl is a 5 to 10-membered, aromatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

aryl is phenyl, indanyl, indenyl or naphthyl;

heterocyclyl is a 5 to 10-membered, aliphatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof;

with the proviso that

~~(1)~~ A is not -C(O)NH(C_1-C_6-alkyl), when Ar is phenyl which is at least monosubstituted with heterocyclyl or heteroaryl containing nitrogen,
~~(2) the compound is not 3-[4-(3,4,5-trimethoxyanilinocarbonyl)-3-oxo-2,3-dihydropyridazino-6-yl]-2-phenyl-pyrazolo[1,5-a]pyridine; 3-[4-(N-ethoxycarbonylmethyl)-carbamoyl-3-oxo-2,3-dihydro-pyridazino-6-yl]-2-phenyl-pyrazolo[1,5-a]pyridine; 3-[4-(N-carboxymethyl)-carbamoyl-3-oxo-2,3-dihydro-pyridazino-6-yl]-2-phenyl-pyrazolo[1,5-a]pyridine; 6-(4-cyanophenyl)-4[(4-carboxybutyl)-aminocarbonyl]-2H-pyridazin-3-one; or 6-(4-methoxyphenyl)-4-methylcarbamoyl-2H-pyridazin-3-one, and~~
~~(3) when A is NHCOCH(CH_3)$_2$, Ar is not unsubstituted or at least monosubstituted bicyclic heteroaryl~~

wherein when Ar is a 9-membered bicyclic heterocycle containing one or more heteroatoms selected from N, O and S, Ar is unsubstituted.

10. (Previously presented) The method according to claim 9, wherein in the formula (I)

A is A1;

R is unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, heteroaryl, heteroaryl-(C_1-C_{10}-alkyl)-, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)-, C_3-C_{10}-cycloalkyl, polycycloalkyl, C_2-C_{10}-alkenyl or C_2-C_{10}-alkinyl,

where the substituents are chosen from halogen, -CN, C_1-C_{10}-alkyl, -NO_2, -OR1, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1, -C(O)NR1R2, -SR1, -S(O)R1, -SO_2R1, -NHSO_2R1, -SO_2NR1R2, -C(S)NR1R2, -NHC(S)R1, -O-SO_2R1, -SO_2-O-R1, oxo, -C(O)R1, -C(NH)NH_2, heterocyclyl, C_3-C_{10}-cycloalkyl, aryl-(C_1-C_6-alkyl)-, aryl, heteroaryl, trifluoromethyl, trifluoromethylsulfanyl and trifluoromethoxy,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoromethoxy or OH;

R1 and R2, independently from each other, are

hydrogen;

unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, C_3-C_{10}-cycloalkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)- or heteroaryl, where the substituents are chosen from halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, CN, NO_2 , NH_2, (C_1-C_6-alkyl)amino-, di(C_1-C_6-alkyl)amino-, OH, COOH, -COO-(C_1-C_6-alkyl), -$CONH_2$, formyl, trifluoromethyl and trifluoromethoxy;

heteroaryl is a 5 to 10-membered, aromatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

aryl is phenyl, indanyl, indenyl or naphthyl;

heterocyclyl is a 5 to 10-membered, aliphatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

11. (Previously presented) The method according to claim 9, wherein in the formula (I)

R is unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)-, C_3-C_{10}-cycloalkyl, heteroaryl or heteroaryl-(C_1-C_{10}-alkyl)-,

where the substituents are chosen from halogen, -CN, C_1-C_{10}-alkyl, -NO_2, -OR1, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1,

-C(O)NR1R2, -SR1, -S(O)R1, -SO_2R1, -$NHSO_2$R1, -SO_2NR1R2, -C(S)NR1R2, -NHC(S)R1, -O-SO_2R1, -SO_2-O-R1, oxo, -C(O)R1, -C(NH)NH_2, heterocyclyl, C_3-C_{10}-cycloalkyl, aryl-(C_1-C_6-alkyl)-, aryl, heteroaryl, trifluoromethyl, trifluoromethylsulfanyl and trifluoromethoxy,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoroethoxy or OH;

R1 and R2, independently from each other, are

hydrogen;

unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, C_3-C_{10}-cycloalkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)- or heteroaryl, where the substituents are chosen from halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, CN, NO_2 , NH_2, (C_1-C_6-alkyl)ami no-, di(C_1-C_6-alkyl)amino-, OH, COOH, -COO-(C_1-C_6-alkyl), -$CONH_2$, formyl, trifluoromethyl and trifluoromethoxy;

heteroaryl is a 5 to 10-membered, aromatic, mono- or bicyclic heterocycle containing one or more heteroatoms chosen from N, O and S;

aryl is phenyl, indanyl, indenyl or naphthyl;

heterocyclyl is a 5 to 10-membered, aliphatic, mono- or bicyclic heterocycle, containing one or more heteroatoms chosen from N, O and S;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

12. (Currently amended) The method according to claim 9, wherein in the formula (I)

Ar is unsubstituted or at least monosubstituted phenyl, pyridinyl, pyrimidinyl, pyrazolyl, thiophenyl, isoxazolyl, benzo[b]thiophenyl, benzodioxolyl or thiazolo[3,2-b][1,2,4]-thiazolyl,

where the substituents are chosen from halogen, [[~~-CN,~~]] NO_2, C_1-C_{10}-alkyl, [[-OR1]] -OH, -C(O)OR1, -O-C(O)R1, -NR1R2, -NHC(O)R1, -C(O)NR1R2, -NHC(S)R1, -C(S)NR1R2, -SR1, -S(O)R1, $-SO_2R1$, $-NHSO_2R1$, $-SO_2NR1R2$, $-O-SO_2R1$, $-SO_2-O-R1$, aryl, heteroaryl, aryl-(C_1-C_6-alkyl)-, formyl, trifluoromethyl and trifluoromethoxy,

and the substituents aryl and heteroaryl may further be at least monosubstituted with C_1-C_6-alkyl, C_1-C_6-alkoxy, halogen, trifluoromethyl, trifluoromethoxy or OH;

R1 and R2, independently from each other, are

hydrogen;

unsubstituted or at least monosubstituted C_1-C_{10}-alkyl, C_3-C_{10}-cycloalkyl, aryl, aryl-(C_1-C_{10}-alkyl)-, C_2-C_{10}-alkenyl, C_2-C_{10}-alkinyl, heterocyclyl, heterocyclyl-(C_1-C_{10}-alkyl)- or heteroaryl, where the substituents are chosen from halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, CN, NO_2 , NH_2, (C_1-C_6-alkyl) amino-, di(C_1-C_6-alkyl)amino-, OH, COOH, -COO-(C_1-C_6-alkyl), $-CONH_2$, formyl, trifluoromethyl and trifluoromethoxy;

heteroaryl is a 5 to 10-membered aromatic, mono- or bicyclic heterocycle, containing one or more heteroatoms chosen from N, O and S;

aryl is phenyl, indanyl, indenyl or naphthyl;

heterocyclyl is a 5 to 10-membered aliphatic, mono- or bicyclic heterocycle, containing one or more heteroatoms chosen from N, O and S;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

13. (Previously presented) The method according to claim 9, wherein in the formula (I)

A is A1;

R is unsubstituted or at least monosubstituted aryl-(C_1-C_6-alkyl)- heteroaryl-(C_1-C_6-alkyl)- or heterocyclyl-(C_1-C_6-alkyl)-,

where the substituents are chosen from halogen, C_1-C_6-alkyl, -OH, -O-aryl, C_1-C_6-alkoxy, -O-(C_1-C_6-alkylen)-N(C_1-C_6-alkyl)$_2$, -C(O)OH, -C(O)O-(C_1-C_6-alkyl), -NH_2, -N(C_1-C_6-alkyl)$_2$, -NH(C_1-C_6-alkyl), -NH(C_1-C_{10}-cycloalkyl), -C(O)NH_2, -C(O)NH-heteroaryl, -C(O)NH-(C_1-C_6-alkyl), -SO_2(C_1-C_6-alkyl), -SO_2NH_2, -C(O)-heterocyclyl, -C(NH)NH_2, heterocyclyl, aryl-(C_1-C_6-alkyl)-, aryl, trifluoromethyl, and trifluoromethoxy,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_3-alkyl, C_1-C_3-alkoxy, fluorine, chlorine, bromine, trifluoromethyl, trifluoromethoxy or OH;

heteroaryl is imidazolyl, thiophenyl, furanyl, isoxazolyl, pyridinyl, pyrimidinyl, benzoimidazolyl, indolyl or benzodioxolyl;

aryl is phenyl or naphthyl;

heterocyclyl is morpholinyl, piperazinyl or piperidinyl;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

14. (Currently amended) The method according to claim 9, wherein in the formula (I)

A is A1;

Ar is unsubstituted or at least monosubstituted phenyl, pyridin-4-yl or pyrimidin-4-yl,

where the substituents are chosen from halogen, C_1-C_6-alkyl, -OH, ~~C_1-C_6-alkoxy,~~ -C(O)OH, -C(O)O-(C_1-C_6-alkyl), $-NH_2$, -N(C_1-C_6-alkyl)$_2$, -NH(C_1-C_6-alkyl), -NH(C_1-C_{10}-cycloalkyl), -NH(heterocyclyl-(C_1-C_6-alkyl-)), -NH(aryl-(C_1-C_6-alkyl-)), $-C(O)NH_2$, -C(O)NH-(C_1-C_6-alkyl), aryl, and heteroaryl,

and the substituents aryl, heterocyclyl and heteroaryl may further be at least monosubstituted with C_1-C_3-alkyl, C_1-C_3-alkoxy, fluorine, chlorine, bromine, trifluoromethyl, trifluoromethoxy or OH;

heteroaryl is pyridinyl or pyrimidinyl;

aryl is phenyl or naphthyl;

heterocyclyl is morpholinyl, piperazinyl or piperidinyl;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

15. (Currently amended) The method according to claim 9, wherein in the formula (I)

A is A1;

R is unsubstituted or at least monosubstituted benzyl, phenylethyl-, phenylpropyl-, piperazinylpropyl-, pyridinylmethyl-, pyridinylethyl- or pyridinylpropyl-,

where the substituents are chosen from chlorine, bromine, fluorine, trifluoromethyl, methyl, ethyl, propyl, methoxycarbonyl and carboxy;

Ar is unsubstituted or at least monosubstituted pyridin-4-yl, pyrimidin-4-yl or phenyl,

where the substituents are chosen from methylamino-, ethylamino-, propylamino-, butylamino-, hydroxy, ~~methoxy, ethoxy,~~ methyl, ethyl, propyl, (phenylethyl)amino-, benzylamino-, and (morpholinylethyl)amino-;

or the racemates, enantiomers, diastereoisomers and mixtures thereof, the tautomers or the physiologically acceptable salts thereof.

16. (Previously presented) A method for inhibiting CDK2 *in vivo* comprising administering a physiologically active amount of a compound according to claim 8.

17.-25. (Cancelled).

26. (New) A compound, chosen from

6-(4-methoxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid (3-pyridin-3-yl-propyl)-amide;

6-(4-hydroxy-3-methoxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide;

6-(4-hydroxy-3-methoxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid (3-pyridin-3-yl-propyl)-amide;

6-(4-methoxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide;

4-[5-(4-chloro-benzylcarbamoyl)-6-oxo-1,6-dihydro-pyridazin-3-yl]-3-methoxy-thiophene-2-carboxylic acid;

6-(5-carbamoyl-4-methoxy-thiophen-3-yl)-3-oxo-2,3-dihydro-pyridazine-4-carboxylic acid 4-chloro-benzylamide; and

4-({[6-(4-hydroxy-3-methoxy-phenyl)-3-oxo-2,3-dihydro-pyridazine-4-carbonyl]-amino}-methyl)-benzoic acid.

27. (New) A method for inhibiting CDK2 *in vivo* comprising administering a physiologically active amount of a compound according to claim 26.